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In the United States Patent and Trademark Office

Mailed ~~199~~ Nov. 2, 2000

JC927 U.S. PTO  
09/705257

11/02/00

Box Patent Application  
Assistant Commissioner for Patents  
Washington, District of Columbia 20231

Sir:

Please file the following enclosed patent application papers:

Applicant #1, Name: Mohamed ElGafi

Applicant #2, Name: \_\_\_\_\_

Title: Phosphate, Phosphatic Fertilizers Manufacturing Process

☒ Specification, Claims, and Abstract: Nr. of Sheets 4

☒ Declaration, Date Signed: Nov. 2, 2000

☐ Drawing(s): Nr. of Sheets Enc. Formal: \_\_\_\_\_ Informal: \_\_\_\_\_

☒ Small Entry Declaration of Inventor(s) ☐ SED of Non-Inventor / Assignee / Licensee

☐ Assignment enclosed with cover sheet and recordal fee: please record and return

☐ Check for \$ \_\_\_\_\_ for

☐ \$ \_\_\_\_\_ for filing fee (not more than three independent claims and twenty total claims are presented).

☐ \$ \_\_\_\_\_ additional if Assignment is enclosed for recordal.

☐ Disclosure Document Program reference letter.

☐ Pursuant to 35 U.S.C. §119(e)(i), applicant(s) claim priority of Provisional Patent Application Ser. Nr. \_\_\_\_\_  
filed \_\_\_\_\_

☒ Return Receipt Postcard Addressed to Applicant #1.

☒ **Request Under MPEP § 707.07(j):** The undersigned, a pro se applicant, respectfully requests that if the Examiner finds patentable subject matter disclosed in this application, but feels that Applicant's present claims are not entirely suitable, the Examiner draft one or more allowable claims for applicant.

Very respectfully,

Mohamed ElGafi  
Applicant #1 Signature

\_\_\_\_\_  
Applicant #2 Signature

3535 Hyland Avenue, #202

Address (Send Correspondence Here)

\_\_\_\_\_  
Address

Costa Mesa, CA 92626

Express Mail Label #

Ek 3801 3239405

; Date of Deposit ~~199~~ Nov. 2, 2000

In the United States Patent and Trademark Office

First/Sole Applicant: Mohamed ElGafi

Joint/Second Applicant: \_\_\_\_\_

Title: "Phosphate, Phosphatic Fertilizers Manufacturing Process"

Small Entity Declaration—Independent Inventor(s)

As a below-named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees under Section 41(a) and (b) of Title 35 United States Code, to the Patent and Trademark Office with regard to my above-identified invention described in the specification filed herewith. I have not assigned, granted, conveyed, or licensed—and am under no obligation under any contract or law to assign, grant, convey, or license—any rights in the invention to either (a) any person who could not be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or (b) any concern which would not qualify as either (i) a small business concern under 37 CFR 1.9(d) or (ii) a nonprofit organization under 37 CFR 1.9(e).

Each person, concern, or organization to which I have assigned, granted, conveyed, or licensed—or am under an obligation under contract or law to assign, grant, convey, or license—any rights in the invention is listed below:

☒ There is no such person, concern, or organization

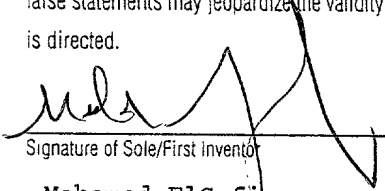
☐ Any applicable person, concern, or organization is listed below: \*

Full Name: \_\_\_\_\_

Address: \_\_\_\_\_

I acknowledge a duty to file, in the above application for patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

  
Signature of Sole/First Inventor

Mohamed ElGafi

Print Name of Sole/First Inventor

November 2, 2000

Date of Signature

N/A

Signature of Joint/Second Inventor

Print Name of Joint/Second Inventor

Date of Signature

\*Note: A separate Small Entity Statement is required from any listed entity.

## **PHOSPHATE AND PHOSPHATIC FERTILIZERS MANUFACTURING PROCESS**

### **BACKGROUND:**

Phosphoric acid is the backbone of all phosphate fertilizers and the production of phosphoric acid is the first step.

Phosphoric acid is produced by what is known as the wet process, in which sulfuric acid is added to the rock. This process is called the wet process(es). The wet processes include the dehydrate and the hemihydrate processes (hydrates of gypsum). All the wet processes are energy intensive and polluting to the environment. Typically, the wet process phosphoric chemical complex requires from one hundred to three hundred acres of acid ponds.

The new process overcomes this problem.

[illegible]

In the new invention, the P2O5 (phosphorus pentoxide) is produced from the phosphate rocks through a gas solid reaction (no water, no acid solution(s) is required). This is accomplished by treating the rocks with acid gases. (Example: SO3 - sulfur trioxide) in any gas phase reactor. (Example: tranflow reactor). The reaction products will include P2O5 in the gas phase and calcium sulphate in the solid phase. P2O5 can be recovered by absorption by acid/chemical solutions, or any other recovery means, depending on the final product desired.

## **CLAIMS:**

The new invention is a:

- 1) Process in which acid gases are utilized to produce P2O5 from phosphate rocks.
- 2) In the new invention/process, the produced P2O5 can be recovered by phosphoric acid solution.
- 3) In the new invention, the produced P2O5 can be recovered by water or a chemical solution containing other fertilizers, and/or animal feed supplement chemicals.

**PHOSPHATE  
AND PHOSPHATIC FERTILIZERS  
MANUFACTURING PROCESS**

**ABSTRACT:**

The new process is a process designed to produce P2O5 (the basic component in phosphoric acid, phosphate chemicals and fertilizers) in the gas phase in lieu of the state of the art (liquid phase) wet process.

The new process is much less polluting than the wet process and much more energy efficient.

## Declaration for Utility or Design Patent Application

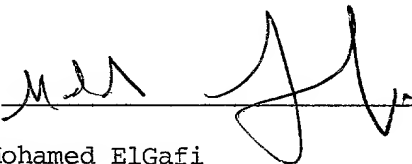
As a below-named inventor, I hereby declare that my residence, post office address, and citizenship are as stated below next to my name and that I believe that I am the original, first, and sole inventor [if only one name is listed below] or an original, first, and joint inventor [if plural names are listed below] of the subject matter which is claimed and for which a patent is sought on the invention, the specification of which is attached hereto and which has the following title:

" Phosphate, Phosphatic Fertilizers Manufacturing Process "

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration. I acknowledge a duty to disclose information which is material to the examination of this application in accordance with Title 37 Code of Federal Regulations, Section 1.56(a).

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both under Title 18, United States Code, Section 1001, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Please send correspondence and make telephone calls to the First Inventor below.

Signature: Sole/First Inventor: 

Print Name Mohamed ElGafi Date Nov. 2, 2000

Legal Residence \* \_\_\_\_\_ Citizen of U.S.

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Signature: Joint/Second Inventor: N/A

Print Name: \_\_\_\_\_ Date: \_\_\_\_\_

Legal Residence \* \_\_\_\_\_ Citizen of \_\_\_\_\_

Post Office Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

\* City and state, county and state or city, state and country, if foreign